Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of managing a network comprising the steps of:

polling resources of the network to gather real-time status information about the network;

evaluating performance of the network by identifying network-wide patterns in the gathered real-time status information; and

~~based on the result of said step of evaluating, providing a prediction of a future network-wide performance problem~~

determining, based on the result of said step of evaluating and from at least one previously defined rule correlating disparate characteristics of the resources of the network, an action for preventing a future network-wide performance problem from occurring;

wherein said disparate characteristics include those selected from: CPU run queue capacity, CPU run queue blocks, CPU run queue waits, context switching, memory paging, swap allocation, disk writes, disk blocking, disk waiting, disk utilization, network inbound packets, network outbound packets, network errors, and network collisions.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The method of claim ~~2~~ 1, further comprising the step of:

initiating the action before the future network-wide performance problem occurring in an attempt to prevent the future network-wide performance problem.

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5. (Previously Presented) The method of claim 1, wherein said step of evaluating performance of the network further includes:

correlating the real-time status information with at least one previously defined rule.

6. (Previously Presented) The method of claim 5 wherein the at least one previously-defined rule defines a known pattern for the gathered real-time status information that foreshadows the occurrence of the future network-wide performance problem.

7. (Previously Presented) The method of claim 1 wherein the future network-wide performance problem is caused by anyone or more of the problems selected from:

operability problem of the resources of the network, operability problem of the network, failure of the resources of the network, failure of the network, integrity problem of the resources of the network, integrity problem of the network, efficiency problem of the resources of the network, efficiency problem of the network, decreased processing speed of the resources of the network, decreased processing speed of the network, usage capacity problem of the resources of the network, and usage capacity problem of the network.

8. (Previously Presented) The method of claim wherein the step of polling resources includes gathering the real-time status information for anyone or more of:

network status, disk status, database status, memory status, CPU status, and operating system status.

9. (Previously Presented) The method of claim wherein the step of polling resources includes gathering the real-time status information by a plurality of

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distributed gateways that are communicatively coupled to a central management system.

10. (Currently Amended) The method of claim 3 1 wherein the at least one previously defined rule includes at least one user defined rule.

11. (Currently Amended) The method of claim 3 1 wherein the at least one previously defined rule is implemented as software code executing on a management system.

12. (Currently Amended) The method of claim 3 1 further comprising:
the at least one previously defined rule correlating disparate network elements.

13. (Canceled)

14. (Canceled)

15. (Currently Amended) A system for managing a network, said system comprising:
at least one polling gateway that is operable to poll one or more network elements to gather real-time status information for said one or more network elements;
at least one processor-based management server communicatively coupled to the at least one polling gateway to receive the gathered real-time status information from said at least one polling gateway; and
the at least one processor-based management server predicting the occurrence of a network-wide performance problem within the network based on the gathered real-time status information;
wherein said at least one polling gateway includes a plurality of distributed polling gateways that are each operable to poll particular ones of disparate

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network elements that include network elements that communicate in different network protocols and include network elements selected from: SNMP network elements, CMIP network elements, and network elements using TCP/IP protocol.

16. (Original) The system of claim 15 wherein said one or more network elements include a plurality of network elements distributed in the network.

17. (Original) The system of claim 15 wherein said one or more network elements include a plurality of disparate network elements.

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Previously Presented) The system of claim 15 wherein at least one rule defines an appropriate action for said at least one processor-based management server to respond to a defined condition being detected.

23. (Previously Presented) The system of claim 22 wherein said appropriate action is an action for attempting to prevent the network-wide performance problem predicted by detection of said defined condition from occurring.

24. (Previously Presented) The system of claim 22 wherein upon detection of said defined condition, said at least one processor-based management server initiates said appropriate action before said network-wide performance problem occurring.

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25. (Previously Presented) The system of claim 15, wherein at least one rule defines a known pattern for status information that foreshadows the occurrence of said network-wide performance problem.

26. (Previously Presented) The system of claim 15 wherein at least one rule defines statistical analysis of said status information that foreshadows the occurrence of said network-wide performance problem.

27. (Previously Presented) The system of claim 15 wherein at leas tone rule defines a known correlation of status information that foreshadows the occurrence of said network-wide performance problem.

28. (Previously Presented) The system of claim 15 wherein said network-wide performance problem is caused by anyone or more of the problems selected from:

operability problem of said one or more network elements, operability problem of the network, failure of said one or more network elements, failure of the network, integrity problem of said one or more network elements, integrity problem of the network, efficiency problem of said one or more network elements, efficiency problem of the network, decreased processing speed of said one or more network elements, decreased processing speed of the network, usage capacity problem of said one or more network elements, and usage capacity problem of the network.

29. (Previously Presented) The system of claim 15 wherein said status information includes one or more from:

network status, disk status, database status, memory status, CPU status, and operating system status.

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30. (Currently Amended) A management system for managing one or more layers of a network, wherein said managing includes predicting network-wide performance problems that are to occur within one or more layers of the network and taking responsive actions in an attempt to prevent or timely respond to the predicted said network-wide performance problems, said management system comprising:

at least one processor-based management server communicatively coupled to at least one polling gateway that is operable to poll at least one network element to gather real-time status information for said at least one network element, the at least one polling gateway including a plurality of distributed polling gateways that are each operable to poll particular ones of disparate said at least one network element, wherein the disparate said at least one network element include said at least one network element that communicate in different network protocols, and said at least one network element selected from: SNMP network elements, CMIP network elements, and network elements using TCP/IP protocol;

the at least one processor-based management server including software code executing thereon, wherein said software code learns a condition for predicting said network-wide performance problem within one or more layers of the network from said gathered real-time status information to enable the processor-based management server to predict the occurrence of said network-wide performance problem within the network.

31. (Previously Presented) The management system of claim 30 wherein said at least one network element include a plurality of said at least one network element distributed in the network.

32. (Previously Presented) The management system of claim 30 wherein said at least one network element include a plurality of disparate said at least one network element.

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33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Previously Presented) The management system of claim 30 wherein at least one rule defines an action for said at least one processor-based management server to take in response to said condition being detected.

38. (Previously Presented) The management system of claim 37 wherein said action is an action for attempting to prevent the network-wide performance problem predicted by the detection of said condition from occurring.

39. (Previously Presented) The management system of claim 37 wherein upon detection of said condition said at least one processor-based management server initiates said action before said network-wide performance problem occurs.

40. (Previously Presented) The management system of claim 30, wherein said condition includes a pattern for status information that foreshadows the occurrence of said network-wide performance problem.

41. (Previously Presented) The management system of claim 30 wherein said condition includes statistical analysis of said status information that foreshadows the occurrence of said network-wide performance problem.

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42. (Previously Presented) The management system of claim 30 wherein said condition includes correlation of status information that foreshadows the occurrence of said network-wide performance problem.

43. (Previously Presented) The management system of claim 30 wherein said network-wide performance problem is caused by anyone or more of the problems selected from:

operability problem of said at least one network element, operability problem of the network, failure of said at least one network element, failure of the network, integrity problem of said at least one network element, integrity problem of the network, efficiency problem of said at least one network element, efficiency problem of the network, decreased processing speed of said at least one network element, decreased processing speed of the network, usage capacity problem of said at least one network element, and usage capacity problem of the network.

44. (Previously Presented) The management system of claim 30 wherein said status information includes one or more from:

network status, disk status, database status, memory status, CPU status, and operating system status.

45. (Original) The management system of claim 30 wherein said at least one network element is represented as an object within object-oriented software executing on the processor-based server, said object having one or more attributes for which said status information may be gathered.

46. (Previously Presented) The management system of claim 45 wherein said condition includes correlation of one or more attributes of one or more objects to define the prediction of said network-wide performance problem.

47. (Original) The management system of claim 30 wherein said management system includes a business management layer.

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48. (Previously Presented) The management system of claim 47 wherein said network-wide performance problem includes a business performance problem.

49. (Original) The management system of claim 48 wherein said at least one network element includes an electronic commerce system for processing commercial transactions with customers via the Internet, and wherein said business performance problem includes a problem resulting in inability of said electronic commerce system processing said commercial transactions.

50. (Original) The management system of claim 30 wherein said management system includes a service management layer.

51. (Previously Presented) The management system of claim 50 wherein said network-wide performance problem includes a service performance problem.

52. (Previously Presented) The management system of claim 51 wherein said service performance problem includes problem with the quality provided to subscribers or clients of the network.

53. (Original) The management system of claim 30 wherein said management system includes a network management layer.

54. (Canceled)

55. (Original) The management system of claim 30 wherein said management system includes an element management layer.

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56. (Previously Presented) The management system of claim 55 wherein said network-wide performance problem includes a network element performance problem.

57. (Original) The management system of claim 30 wherein said management system includes a plurality of at least the following layers: business management layer, service management layer, network management layer, and element management layer, and wherein a plurality of said layers are correlated within said at least one rule.

58. (Currently Amended) ~~The management system of claim 30~~ A management system for managing one or more layers of a network, wherein said managing includes predicting network-wide performance problems that are to occur within one or more layers of the network and taking responsive actions in an attempt to prevent or timely respond to the predicted said network-wide performance problems, said management system comprising:

at least one processor-based management server communicatively coupled to at least one polling gateway that is operable to poll at least one network element to gather real-time status information for said at least one network element;

the at least one processor-based management server including software code executing thereon, wherein said software code learns a condition for predicting said network-wide performance problem within one or more layers of the network from said gathered real-time status information to enable the processor-based management server to predict the occurrence of said network-wide performance problem within the network; and

~~wherein said management system includes~~ a plurality of at least the following layers: business management layer, service management layer, network management layer, and element management layer, and wherein said network-wide performance problem is a problem within any of said plurality of layers.

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